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AMERICAN POTATO JOURNAL

PUBLISHED BY

THE POTATO ASSOCIATION OF AMERICA

EAST LANSING, MICHIGAN

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Potato Storage

E. V. HARDENBURG, College of Agriculture, Ithaca, N. Y.

This year the potato growers of this country increased their acreage 11 per cent over that of 1930. With normal growing conditions this would have meant a crop more that 8 per cent greater than the 5-year average. But the extreme heat wave was felt during July and August over the entire northern potato growing area with the result that yields will be subnormal. The present crop estimate of 361,000,000 bushels represents an average yield of only about 102 bushels per acre compared to a normal yield of 118 bushels. The September 1st estimate of 361,000,000 bushels represents a crop about 5 per cent under the 5-year average and less than 2 bushels per capita. In normal times, this would be recognized as a short crop year and a year when the trade would expect potato prices to advance toward the end of the shipping season. But times are not normal. The buying power of the consuming public is expected to be low this winter. If present buying methods continue, orders will be slow, steady and on what is known as a "hand to mouth" basis." Prices may be disappointingly low to the producer and there may be little tendency of the consuming trade to store quantity. It is likely to be a buyer's market and that means the market may be choosy about quality. All this indicates that the producer more than ever had better harvest and store his crop so as to safeguard the quality of his tubers.

Storage Fundamentals

Successful storage of potatoes requires first of all a proper appreciation of the perishability and the quality factors of the

product itself. The tuber itself is about 60 per cent water. Conservation of this water naturally depends upon the thickness and freedom from blemishes of the skin or protective covering of the tuber. It naturally follows that potatoes to be in best storage condition should be fully matured, with the skin hard and dry and free from bruises and abrasions. Dirty tubers do not store well because in moist storage, the dirt tends to collect storage moisture, prevents free circulation of oxygen and the passage of foul air and encourages rot producing organisms. To insure tubers in best storage condition, pad or otherwise equip the digger to reduce bruising to a minimum. One-inch rubber garden hose strung on the rear shaker-bars may be found useful. Use a digger of the long low-hung continuous elevator type to lessen the distance from the rear of the digger to the ground where possible. Allow the tubers to lie on the ground an hour or two until the skin can dry and set. Use splint baskets instead of slatted crates to reduce tuber injury when picking up the crop. Use great care to avoid bruising when placing the crop in storage. If these precautions seem unnecessary at a time when the rush of harvest is on, consider the fact that they may easily mean a very great saving of loss from decay, moisture evaporation, and sprouting, and in conservation of market quality by the end of the storage period. Except for the elimination of decay and the more seriously bruised tubers, the grading or mechanical sizing of the crop as it is put into storage is not recommended. Grading at this time may result in additional tuber injury and does not by any means avoid the necessity of regrading when the crop is taken out of storage.

Storage Requirements

The best type of storage is that which will result in least loss of weight in tubers from decay, sprouting and moisture evaporation. It must equally well conserve culinary quality. Underground storage is usually least expensive and most efficient. Bank storage, though possibly more expensive to construct has been found more efficient than barn basements and house cellars. This is true because being entirely below ground, it is better insulated, it maintains a lower and a more uniform temperature, and a higher humidity. House cellars are less efficient because of the higher temperature maintained and the greater temperature fluctuation. Potatoes stored in house cellars should be partitioned away from the furnace.

The best temperature range for the potato storage is between 36° and 40° Fahrenheit with a minimum of fluctuation. If the temperature goes above 40° at any time after the first two months of storage, the tubers are likely to be thrown into a

sprouting condition. On the other hand, potatoes will not ordinarily freeze unless the temperature goes below 30°.

A relative humidity of about 90 to 95 per cent of saturation seems best. Less than this, the tubers may dry out from moisture evaporation. Higher than this, moisture may accumulate on the walls and ceiling rotting the timbers or encouraging decay by rot producing organisms.

In most cellars it is safe to pile the tubers 6 to 8 feet high without danger of suffocation at the bottom and center of the pile. This element of risk seems to be great only in cellars where the temperature is higher than 50° and the humidity above 90 per cent. Finally when preparing the storage this fall, see that it is thoroughly clean, well insulated on ceiling and side walls and equipped with a good thermometer.

Seed Potato Treatment On a Large Scale

D. M. BABBITT, County Agricultural Agent, Bridgeton, New Jersey

The treatment of seed potatoes on a community basis was used this summer at Deerfield in Cumberland county, New Jersey. With the use of a seed treatment machine made by one of the leading growers of the community nine farmers treated 765 150-lb. sacks in a trifle more than seven hours.

The seed was brought out of storage and transferred to the community dipping center by truck. The truck was backed up to the seed treatment machine and the seed run through about as fast as the potatoes could be dumped from the truck. At the back of the machine two men took the seed away in 5/8 baskets and put it on another truck to be taken home to the farm.

The treating machine is operated by a 1/2 horse power motor, which turns a carrier to elevate the potatoes out of the mercury solution in which they are disinfected. The man on the truck with the 150-lb. sacks that have been brought out of storage usually has a boy to open the sacks. The man on the truck dumps them into the hopper of the seed treatment machine. The whole operation uses four men and a boy.

The volume of the solution in the seed treatment tank is kept up by adding more solution which is mixed in pails while the

seed treatment process is going on. At the end of three or four hours the entire solution is dumped to get rid of the mud which accumulates in the bottom of the tank.

The potatoes treated on the community basis were used for the seed potato crop which is grown in Salem and Cumberland counties during the late summer and fall of the year.

After working a day on the community basis the owner of the treatment machine took the machine home and treated his own and a neighbors seed.

The seed treatment machine was made by J. Norton Woodruff of Deerfield, who made his first machine of this type in 1930. This machine was built to be hand operated but when it was found to work so satisfactorily a motor was attached to it. During last winter Mr. Woodruff found that he had an opportunity to sell two of these machines. In building the new ones he profited by the experience gained with the first one made and not only increased the capacity of the seed treater but has one that will give a much longer term of service.

Improvement and Control Work in North Dakota

C. L. FITCH, Ames, Iowa

The last days of August and the first of September this year, as last year, I spent in the Red River Valley, the important seed producing region for the area from Ohio to the Rocky Mountains, and from the Great Lakes to the Gulf of Mexico. I have been particularly interested in the progress being made in North Dakota under the new seed commissioner, E. N. Gillig of Fargo, who long has been a member of this association.

For a number of years, the commissioner has had H. D. Long, formerly the seed analyst in the department at Fargo, stationed at the Agricultural School at Park River, as a regional seed specialist and overseer of improvement and control work of all kinds. In that neighborhood, established a number of years ago, there is an organization called the Northeastern Breeders' association. It first was set up as an organization of cattle breeders. It holds a monthly meeting and an annual meeting, and these meetings were a convenient place for the presentation of improvements in seeds as well as in animals, so that seed improvement work has become a leading part of its activities, and Mr. Long, the regional seed expert of the seed commissioner, secretary of the association.

Mr. Joseph Thompson of Nash, North Dakota, the district manager for Leonard, Crossett and Riley of Moorhead, the great produce house, is president of the association and gives a lot of time and interest to the job. I have never seen a membership show more interest that has been shown by the men on whom Mr. Long and I have called.

Mr. Long gives no time to teaching, has all his time for the seed improvement job. At the agricultural school, he has stenographic privileges, the use of the greenhouse, the use of land, and the time of a good workman. When I was there he was constructing a first class concrete cave for the storage of his proved stocks of seed potatoes. Recently the association bought him 80 acres of additional land, buying next to that of the school, and on it he has 12 acres of the Northeastern Breeders' association strain of Cobblers, in competition with some 75 other lots of Cobbler seed. This selected and improved strain of his produced at our Des Moines plots this year, more than any other sample.

Mr. Long is doing similar work in Triumphs and soon will have early maturing, mid-season and later strains of this variety for sale for members of his association.

For several years, he has been busy separating the Ohio family into early, medium and late strains. He finds that changes of season and of other sorts are always going on, and nowhere more than within the Ohio family. He has an extra early selection, probably freer from knobs than any general stock now in his increased plots. It looks as if the first carload of this improved extra early Ohio might be ready to move by the fall of 1933.

The best Cobbler seed producing region which we found hitherto in the Red River valley is the Fosston, Polk county, Minnesota, neighborhood. Too many of the growers there, however, have not eliminated spindle tuber from their stocks, so that anyone obtaining this high yielding Fosston strain is under danger of having his seed stock destroyed in usefulness by spindle tuber. Mr. Long has about an acre secured from Bernt Lorentzen, a grower at Fosston who has had the best records through the recent years with us, about twenty bushels of his seed, and is purifying it from spindle tuber and other diseases. It has seemed likely this Fosston strain will be superior for our peat beds, even to the Northeastern Breeders' strain, and we shall hope within a few years to have an abundant supply produced under the watchful eye of Mr. Long.

In our yield test plots on muck, with Sam Kennedy of Clear Lake, the Northeastern Breeders' association stock stood high, but two strains from Felix Zeloski of Antigo, Wisconsin, topped everything else. They also stood well on clay loam at Des

Moines. At Clear Lake, big yields of U. S. No. 1 size and quality were for Mr. Zeloski's SS strain, 410 bushels and for his FF strain, 409 bushels. Of course, I am reporting this possible discovery of a seed stock which sets early and does well where early maturity is forced or is wanted, and also does the very best where conditions favor somewhat later maturity, and we shall hope that within a few years, Mr. Long will have carloads of Zeloski strains for us.

Mr. Gillig recently has hired also Mr. A. W. Aamodt who taught at the State College of Minnesota the first college course in potatoes known to the writer and who nearly gave his life for the Minnesota State Potato Exchange and cooperative marketing, and who before and after the above work has been county agent in Bemidji, Moorhead, Duluth and Crookston, one of the best potato men in the west. Mr. Gillig has put him into another seed potato region to do work similar to that of Mr. Long's.

North Dakota at the same time, through another lieutenant of the seed commissioner, R. C. Hastings, who is in charge of the inspection force, is putting over a vigorous and likely a successful quality campaign in order to extend the market and increase the net returns from North Dakota table potatoes.

The writer long has felt that a governmental agency was needed for the maintenance and improvement of seed stocks of all kinds, and that colleges were not the best agencies for this work. Of course I am rejoiced to see the state departments of agriculture and particularly the seed commissioner of North Dakota busy on this job.

Mechanical Injuries to Potatoes

"The cause and prevention of mechanical injuries to potatoes" has been studied by H. O. Werner of the Nebraska Experiment Station, Lincoln, Nebraska, and reported in Bulletin 260. From this bulletin the following deductions and recommendations are made:

Much of the damage can be avoided with proper attention to methods of handling and the use of proper equipment.

1. The potatoes should be reasonably mature.
2. Potatoes growing in moist soil have a more tender skin and are therefore more easily cracked and cut in harvesting. Extra care is necessary.
3. Potatoes growing in dry soil have tougher skins but are more often injured because little or no soil is carried over the digger with the tuber.

Careful selection of a digger and careful adjusting has re-

duced digger damage an average of 29%. The essentials for a good digger are:

a. Wide enough, not less than 24 inches.
b. Chain not too steep.
c. Operation of the two chains as one unit.
d. Operate deep enough in all kinds of soil to get all potatoes without cutting.
e. Rear end of digger adjustable—raised or lowered as needed to free potatoes from soil and prevent damage by too high dropping of tubers.

The efficiency of any digger can be increased by the following:

a. Equipping the front end with disks or small plows that will deflect soil on digger blade, thus forcing all potatoes up over apron.
b. Using plenty of power so that the digger can be operated deep enough and fast enough.
c. If potatoes bounce around or if soil is sifting through too rapidly, remove elliptical agitators under apron and replace with rollers.
d. Pad digger chain when handling immature tubers. Rubber hose or burlap is good for covering chain sections.
e. The removal of the rear apron eliminates many bruises, particularly in cloddy or moist soil, or a canvas or burlap belt around rear chain helps to prevent bruising.
f. When the two chains are combined as one, bruising is reduced.
g. Lower rear of apron close to ground; potatoes will then drop only a short distance.
h. Pad all parts of digger against which potatoes are likely to strike. Padding made from hose, inner tubes, or belting is useful.
i. If deflectors are used, pad them.
j. If tractor is used to haul digger, remove outer wheel lugs to prevent cutting and smashing potatoes in adjacent rows.

Picking up operations to prevent tuber injury:

a. Leave potatoes exposed to sun for 3 or 4 hours after digging.
b. Line or pad all picking baskets with one or two layers of burlap.
c. Pickers should handle potatoes carefully. Do not allow the tossing of tubers into baskets from too great a distance.
d. Roll or pour potatoes from baskets into bags with care. Do not drop tubers over one foot.
e. Do not handle sack roughly while potatoes are enclosed.
f. Do not drop sacks on floor of wagon, cellar or barn.
g. Do not step or walk on potatoes.
h. Use low wagon so that potatoes can be handled easier and

thus lessen the chance of roughness resulting in bruising.

i. In storing, carry sack to rear of bin and carefully roll potatoes out of sack.

—A. E. WILKINSON, Storrs, Conn.

Program of the Eighteenth Annual Meeting of the Potato Association of America

New Orleans, La.
December 28-30, 1931

Monday Afternoon Session, December 28, 2 P. M.
Room 19, Gibson Hall, Tulane University

Address by the President (10 min.)—John S. Gardner, University of Kentucky, Lexington, Ky.

Potato Investigations in Louisiana (30 min.) (Lantern)—Julian C. Miller and W. D. Kimbrough, Louisiana State University, Baton Rouge, Louisiana.

Stimulating influences in the Production of larger yields of Potatoes per acre at a lower cost per unit (15 min.) (Lantern)—Wm. Stuart, U. S. Department of Agriculture, Washington, D. C.

Breaking the Rest Period of the Potato (20 min.) (Lantern)—Wm. Stuart and E. H. Milstead, U. S. Department of Agriculture, Washington, D. C.

Effect of Prestorage and Storage Conditions on Physiological loss in weight of potato tubers (20 min.) (Lantern)—Ora Smith, Cornell University, Ithaca, New York.

Fertilizer Placement Studies with Potatoes (30 min.) (Lantern)—W. H. Martin, Agricultural Experiment Station, New Brunswick, New Jersey.

Cooperative Potato Breeding (20 min.)—F. J. Stevenson, U. S. Department of Agriculture, Washington, D. C.

Plat Technique for Field Experiments with the Potato—J. R. Livermore, Cornell University, Ithaca, New York.

Potato Tuber Defects Under Field Conditions (15 min.) (Lantern)—E. V. Hardenburg, Cornell University, Ithaca, N. Y.

Tuesday Morning Session, December 29, 9:30 A. M.
Room 19, Gibson Hall, Tulane University

Report of the Secretary-Treasurer (10 min.)—H. C. Moore, East Lansing, Michigan.

Appointment of Committees (10 min.)

Report of the Seed Potato Certification Committee (30 min.)—Wm. H. Martin, Agricultural Experiment Station, New Brunswick, New Jersey.

Potato Seed Requirements of our Southern Growers (20 min.)—J. W. Weston, Louisiana Farm Bureau Federation, Baton Rouge, Louisiana.

How to Grow 300 Bushels of Potatoes per Acre in Southern Louisiana (20 min.)—A. J. Ellender, Houma, Louisiana.

The Effects of Carbon Monoxide Gas on the Seed Quality of Potatoes (10 min.)—R. C. Hastings, State College Station, Fargo, North Dakota.

The Commercial Cleaning of Potatoes for Market (10 min.)—H. G. Ingerson, John Bean Mfg. Co., Lansing, Michigan.

The Value of Customary Field Practices in Determining the Adaptability of

New Potato Seedlings—A. G. Tolaas, University of Minnesota, St. Paul, Minnesota.

Shipment Restrictions as a Means for Meeting a Surplus Situation (20 min.)—E. A. Stokdyk, University of California, Berkeley, Calif.

Tuesday Afternoon Session, December 29, 2 P. M.

Room 19, Gibson Hall, Tulane University

Wheel Damage in Spraying Potatoes (15 min.) (Lantern)—C. L. Fitch, Iowa State College, Ames, Iowa.

A New Test for Fertilizers in Potato Stems With Demonstration on Controlled Material (20 min.) (Lantern)—Harry H. Gardner, Potash Syndicate, Mason City, Iowa.

Planting Potatoes in Twin Rows (15 min.) (Lantern)—Walter M. Peacock, U. S. Department of Agriculture, Washington, D. C.

The Tolerance of Potatoes to Soil Reaction in Ohio (10 min.) (Lantern)—John Bushnell, Agricultural Experiment Station, Wooster, Ohio.

Fertilizers for Potatoes on Ten High-lime Peat and Muck Farms in 1931 (10 min.) (Lantern)—C. L. Fitch, Iowa State College, Ames, Iowa.

The Second Setting of Potato Tubers (10 min.) (Lantern)—E. B. Tussing, Ohio State University, Columbus, Ohio.

Some Climatic Factors as They Affect Potato Production in Florida (20 min.) (Lantern)—M. R. Ensign, Agricultural Experiment Station, Gainesville, Florida.

Eight Years' Results With Fertilizers for Potatoes (20 min.) (Lantern)—A. M. Musser, Agricultural Experiment Station, Clemson College, South Carolina.

Recent Experiment Results in Fertilizing Potatoes in Connecticut (15 min.)—B. A. Brown, Storrs Agricultural Experiment Station, Storrs, Conn.

Wednesday Morning Joint Session With The American Phyto-Pathological Society, December 30, 9:30 A. M.

Room 19, Gibson Hall, Tulane University

Lubricating-oil Sprays for Potatoes—Paul A. Young, Agricultural Experiment Station, Bozeman, Montana.

Yellow Dwarf and Moron Diseases of Potatoes in Michigan—J. H. Muncie, Michigan State College, East Lansing, Michigan.

Yellow Dwarf of Potatoes in New York State—Karl Fernow, Cornell University, Ithaca, New York.

Some Diseases of Wild Potatoes in Mexico—Donald Reddick, Cornell University, Ithaca, New York.

Blight Immune Potato Hybrids—Donald Reddick, W. F. Crosier and W. R. Mills, Cornell University, Ithaca, New York.

Pathogenic and Cultural Comparisons of Strains of Rhizoctonia Solani—O. H. Elmer, Agricultural Experiment Station, Manhattan, Kansas.

Recent Investigations of Potato Calico—D. R. Porter, Agricultural College, Davis, California.

Potato Virus Diseases in 1931—Donald Folsom, Agricultural Experiment Station, Orono, Maine.

A Potato Seedling Showing Resistance to the Late Blight Fungus (10 min.) (Lantern)—Reiner Bonde, Orono, Me.

Some Results of Potato Indexing in Wisconsin (10 min.)—J. W. Brann, University of Wisconsin, Madison, Wis.

Wednesday Afternoon Session, December 30, 2 P. M.

Business Meeting—Report of Committees and Election of Officers.

Crop and Market News

Potato Prices Advance in Many Districts

(Contribution from Bureau of Agricultural Economics)

November reports on the yields secured indicate a potato crop of 382,325,000 bushels, compared with the 1930 crop of 343,236,000 bushels. A crop of that size would be slightly above average for the five-year period, 1925-1929. The fall was unusually favorable for the further development and harvesting of the potato crop. Frosts had not visited some of the more important late-potato growing states up to the end of October and, with favorable moisture conditions, the crop took on tonnage rapidly. With losses from blight and freezing also low, yields were running above the earlier expectations in practically all of the northern states from Maine to Illinois and Wisconsin, and also in Idaho. The average yield per acre for the country as a whole may be 109 bushels, ranging from 32 in South Dakota to abut 250 bushels in Maine. Notwithstanding the small loss from blight and field frost, the quality of the potato crop is reported at 79%, as compared with 83% for the 1930 crop and 86% the average for the 10 years preceding. The reports on quality, which may not be strictly comparable, average lower than in any year since the very dry season of 1901.

Since all potatoes from the early and midseason states have been moved, interest now centers on the late or main-crop states. The 19 surplus-producing late states have, according to the November estimate, a total of 262,087,000 bushels, compared with 235,078,000 last year. This is an increase of 11%. A comparison of the several groups among these leading states is given below:

	1930	1931
Eastern (Me., Vt., N. Y., and Pa.)	91,551,000	111,495,000
Central (Mich., Wis., Minn., N. Dak., S. Dak., and Neb.)	73,413,000	93,142,000
Western (Mont., Ida., Wyo., Colo., Utah, Wash., Ore., and Calif.)	70,114,000	57,450,000
Total, 19 States	253,078,000	262,087,000

Total carlot shipments from these important late states for the 1931 season to November 7 were 52,775 cars, as against 68,430 a year ago and a 1930-31 season total of 187,945 cars. With heavier production this year, it is evident that there are many more potatoes yet to be marketed than there were a year ago. In only three of these states—Michigan, Wisconsin, and North Dakota—has movement to date this season exceeded that to the same time last year. During early November, shipments

were averaging about 700 cars daily, or considerably less than the year before.

Price advances were the rule during October. About mid-November, greater firmness in f. o. b. markets appeared to be in southern Idaho, Colorado and Washington. The cash-track price of best sacked Russet Burbanks had advanced to $15 per ton in the Yakima Valley. Shippers of Russets in southern Idaho were receiving 55c-60c per 100 pounds, with Rurals at 45c. Two varieties of potatoes in southern Colorado were ranging 70c-80c per 100 pounds on a usual-term basis, while northern Colorado points reported most sales at 65c-70c. Most other producing areas reported a rather weak tone, with a downward tendency. Bliss Triumphs returned only 48c in western Nebraska. North central states quoted a general range of 55c-60c. Round Whites sold at 65c-70c in western New York. Sacked Green Mountains ruled 45c in northern Maine and 80c on Long Island.

The Chicago carlot market was rather weak. Northern Round Whites sold there at 75c-80c per 100 pounds, with Red River Ohios at 90c-95c, and Nebraska Triumphs at $1.10-$1.20. Best Idaho Russets were bringing $1.30-$1.45 in Chicago. January "futures" on these Idaho potatoes touched $1.58 and Round Whites 96c per 100 pounds. Maine Green Mountains for January delivery in Boston sold at $1.02, compared with the "spot" market of 85c in that city. General jobbing range of Green Mountains in eastern markets was 85c-$1.35, while New York and Pennsylvania Round Whites sold at 85c-$1.15. All potato prices were still far below those of a year ago.

Notes

COLORADO

Montrose, Colo.—Twenty-four yields of 600 bushels or more of potatoes to the measured acre were dug by 23 Montrose county farmers, including five 4-H club boys and their club leader, Kenneth Heath, who produced 808.5 bushels per acre to win the county potato king crown for 1931.

Such a record is phenomenal, not only among the counties of Colorado, but throughout the United States, according to Oscar Stanton, Montrose county agricultural extension agent, and C. H. Metzger, associate state horticulturist for the Colorado Agricultural college, both of whom cooperated with the potato-growers who obtained such big yields.

Two of the 4-H club members were Edwin Meyer and Elmer Bohl, each only 11 years old, it is emphasized by C. W. Ferguson, state club agent for the college. George Doudy, 14-year-

old club member, who was the first club youth to win membership in the famous Colorado 600-Bushel club with a yield of 667.2 bushels of potatoes per acre last year, dug 783.3 bushels to the acre this year. Ervin Faast, 15, and Frank Heath, Jr., 14, are the other two club lads who grew more than 600 bushels of potatoes to the acre.

Andy Barslund, a Bostwick Park farmer, was not satisfied with only one big yield. He dug 770 bushels from one acre and 735 bushels from another.

The use of seed certified as of high quality by the state seed certification service, which is conducted by the agricultural college, enabled many of the growers to obtain the enormous potato crops per acre and thereby cut their costs of production and increased their returns per acre.

The planting of potatoes on ground that had been in alfalfa several years previously, and that was crowned or plowed under in the fall, several cultivations and irrigations, the use of treble super phosphate fertilizer, and in a few instances potash, and the treatment of seed before planting were among the other improved practices which made possible such large yields per acre.

The complete list of the new members of the 600-bushel club, each of whom will receive membership certificates from the college extension service, is given by Stanton and Metzger as follows:

Kenneth Heath, who is a freshman student at the Agricultural college this year, 808.5 bushels of Rural New Yorker No. 2 potatoes, 58 per cent of which graded U. S. No. 1.

George Doudy, 783.3 bushels, Peoples Russet, 69 per cent No. 1. Elmer J. Bohl, 650.5 bushels, Rurals, 61 per cent No. 1. Frank Heath, Jr., 611.7 bushels, Rurals, 70 per cent No. 1. Edwin Meyer, 611.2 bushels, Rurals, 40 per cent No. 1. Ervin Faast, 652.3 bushels, Brown Beauty, 50 per cent No. 1. Of the 12 members of the 4-H club led by Kenneth Heath, these five won memberships in the 600-bushel club.

George Eckerdt, 806.2 bushels, Peoples Russet, 75 per cent No. 1. Andy Barslund, 770 bushels, Peachblow, and 735 bushels, Rurals. Chester Blackburn, 715.3 bushels, Rurals, 93 per cent No. 1. Richard Faast, 714.7 bushels, Peoples Russets, 74 per cent No. 1. George Howell, 694.5 bushels, Brown Beauty, 67 per cent No. 1. Henry Koch, 662.5 bushels, Rurals, 57 per cent No. 1. Frank Heath, 659 bushels, Rurals, 63 per cent No. 1. Henry Faast, 642.8 bushels, Peoples Russet, 58 per cent No. 1. Gilbert Howell, 642.7 bushels, Rurals, 46 per cent No. 1. Jacob Meyer, 632.3 bushels, Rurals, 46 per cent No. 1. Ed. Faast, 627.2 bushels, Rurals, 57.5 per cent No. 1. Clarence Sanburg, 624.7 bushels, Rurals, 60 per cent No. 1. G. F. Royal,

county potato king last year, 615.3 bushels, Peoples Russet, 55 per cent No. 1. Hiram McNiel, 609.7 bushels, Rurals, 73 per cent No. 1. Harold Magraw, 608 bushels of Peoples Russet, 47 per cent No. 1 W. W. Price dug 673.3 bushels of potatoes from a measured acre, and K. E. Orme harvested 609.7 bushels to the acre.

Only one other yield of more than 600 bushels has been reported in Colorado so far this season. That was a yield of 1,069.06 bushels of Bliss Triumph potatoes to the measured acre, a new world's record for this variety, which was produced by John Gredig of Del Norte, Colo.

—COLORADO AGRICULTURAL COLLEGE, EDITORIAL SERVICE.

WASHINGTON

Washington State Potato Marketing Committee Meets Considers Outlook Facts

Concludes Shortage of No. 1's May Indicate Better Market

This committee met in Yakima, November 5, 1931. Statistics on production estimates given here agree with the official November crop report.

1. The estimated production of potatoes in the western states, the only area producing Russet Burbanks, is 18 per cent less than last year.

2. The production of the state of Washington is estimated this year at 6,900,000 bushels, as compared with 8,500,000 bushels produced last year. The Idaho production is 24,700,000 bushels this year against 27,000,000 bushels last year.

3. A larger percentage of the Washington crop has been sold to date than was sold up to the same date last year. The same is true for Idaho.

4. A smaller percentage of the estimated potato production in Washington will be marketed this year because:

   A. The new state regulation practically prevents the marketing of culls.

   B. Buyers have forced rigid grading requirements in the purchase of No. 2 grade and many liner No. 2's are thrown in with the culls, whereas last year they were sold with No. 2's.

   C. Further reductions in the potatoes available for market usually occur in a year of low prices because of greater wastage in harvesting and grading.

5. The quality of potatoes in all the western states is poor this year. A much smaller percentage of No. 1 potatoes is

being harvested than last year. The percentage of No. 1's in Idaho is the lowest in years.

6. Producers have this fall apparently sold a higher percentage of their supply of No. 1's than of the No. 2's, according to reports from shipping centers.

7. No. 1's on the Chicago market are now bringing 60c to 65c premium over eastern varieties, because of the short crop in the West and the very small percentage of No. 1 Russet Burbanks.

8. While the buying power of the consumers has been low, the present tendency is apparently upward and, if so, will have a favorable influence on potato prices as well as the prices of other commodities.

Conclusion: Although the estimated total production in the United States is 40,000,000 bushels greater than last year, nevertheless, with the above facts in mind, the present feeling in the trade, and supported by this committee, is that prices of No. 1 Russet Burbanks will probably go higher as the season advances. Very high prices are not expected because of the competition of very large supplies in the east and the probability that business conditions will improve slowly.

Review of Recent Literature

Black, William. Potatoes. Report of the Director of Research to the Annual General Meeting of the Scottish Society for Research in Plant Breeding, July 30, 1931.

The potato breeding work includes the study of selfed and hybrid progenies. Varieties and self lines are used as parents of hybrids. The genetical constitution of several varieties and strains is being ascertained. The most promising seedlings are selected for distribution. Some of the selfed strains are now in the fifth generation. None of these strains is breeding true to type for all the characters, although the degree of uniformity is increasing. Loss of vigor through inbreeding has not yet become apparent. In the first year many of the later maturing seedlings make the most vigorous growth and produce the largest tubers. When preference had been given to the higher yielding seedlings subsequent trials have shown that they were mainly, if not entirely, late maturing types.

Little difficulty is experienced at Ainville in maintaining selected stocks of seedlings or varieties in a healthy condition. The increase in the amount of virus disease is practically negligible. Some degenerate plants were found among the first year seedlings but these were thought to be abnormalities of genetic origin.

—F. J. STEVENSON.